Managing Electrical Equipment Is Important to Your Business

Lighting, air conditioning, and Factory Automation. It’s safe to say that today’s businesses simply do not operate without electricity. Lowering electricity and management costs are essential to virtually every form of business. And Panasonic offers some innovative methods of cutting these costs with efficient time management for electrical facilities.

Operating Fountains Only When Someone Is There to Enjoy Them

Fountains are wonderful ways to soothe people’s spirits, but that only happens when people are there to see them. Operating them during the time periods when many people pass by, and turning them off when nobody is around, such as at night, reduces the amount of water used and slashes operating costs.

Minimising the Electric Bill for Large-Scale Lighting

Using electricity outside of a company’s business hours is clearly a waste. This is especially true when it involves large-scale lighting. It’s essential that lighting equipment be turned on and off precisely and frequently so it is used only when necessary.

Optimising Production Line Control Is Efficient Management

Today’s production lines are becoming increasingly automated. Management aims to increase profits by operating machinery more efficiently. Costs can be greatly reduced by turning the power off during lunch hour and over the weekend.

Minimising Costs by Controlling Air Conditioning

Leaving the air conditioning on constantly, regardless of whether there are people around or not, is clearly a waste of electricity. Turning it off when there are only a few people there makes more efficient use of your air conditioning system.
What’s an Automatic Time Switch?

An automatic time switch automatically controls the use of electricity according to time. It’s a device that lowers both electrical and labour costs.

Automatically Turns the Power On and Off

The Time Switch combines a clock with a switch to automatically turn power on or off at preset times. It is generally built into a lightboard or distribution panel, and controls electricity on a 24-hour or weekly basis. It makes it possible to replace conventional manual control with automated, reliable ON/OFF time management.

Simply Set the Time for ON/OFF Control

Time management consists of simply setting the times to turn the power on and off. A wide range of uses are possible across various operations, such as lighting, air conditioning, water supply, and livestock feeding.

Example: Managing electricity in the office

From 8:30 AM to 12:00 AM

Turn the power on at the start of the workday. Lighting and air conditioning are turned on to provide a smooth start to office work.

From 12:00 PM to 1:00 PM

Lunchtime. Lighting and air conditioning are turned off while people leave the office for lunch. No power is wasted.

From 1:00 PM to 6:00 PM

Lighting and air conditioning are turned on precisely when lunchtime ends. Then the power is automatically turned off when the workday finishes. Again, no power is wasted.

Eliminating Electrical Waste Is Also Ecological

Because the power is reliably turned on and off according to a preset time schedule, the amount that was wasted by extended use is saved, and electric bills are effectively lowered.

Cutting Labour Costs Is Also Efficient

Since the job of turning the power on and off is done automatically instead of manually, you can assign your valuable human resources to more important jobs. Human error is also eliminated, so power management is more reliable.
Panasonic Advantages

Panasonic, with almost 100 years of expertise forged in the Electrical Construction Material field with its Wiring Devices series, has also established a name for itself in the Time Control Devices market during the past 50 years with its Automatic Time Switch.

Thorough Quality Control

In addition to advanced functions, Panasonic focuses its manufacturing efforts on providing high durability and performance for many years of reliable use, and selects materials with full consideration of the global environment. Certification by third-party institutions and compliance with a wide range of international standards attest to these efforts. This approach is also used with Panasonic’s Automatic Time Switches, to allow our customers worldwide to experience a new level of comfort and safety for the control of electric equipment.

Meeting IEC Standards

Panasonic’s product design has been recognised and certified by many international organisations worldwide, such as the IEC (International Electrotechnical Commission), the top reference for electrical and electronic safety standards. Our Automatic Time Switch has successfully passed and complies with the IEC730-2-7 directives to provide safer and more comfortable use of our line-up to our customers.

Products Compliant with the RoHS Directive

Panasonic’s manufacturing processes are based on management standards for chemical substances by complying with the EU RoHS directive in order to provide all of our customers safer products with less impact on the environment.

Unique Features Designed to Meet Precise Needs

Detailed consideration is given to users in the form of functions that are helpful in ordinary usage, and designs that simplify maintenance.

- Easy Operation Check
- Easy Battery Replacement
- Preventing Entry of Ants and Other Small Insects

A power lamp is located on the front panel, so the user can see at a glance whether the unit is operating or not, thus helping to provide safe use.

With conventional time switches, the unit must be removed from its installation location, such as in a distribution panel, to replace the batteries. Panasonic’s Time Switch lets you easily replace the batteries from the front panel. This makes maintenance considerably easier.

Time Switches are sometimes subject to the entry of ants and other small insects, which can cause malfunctions. Panasonic Time Switches have an airtight construction that prevents this problem for long, trouble-free use.
Switchboards/Control Panels

Machinery can be precisely and automatically operated to match various needs. DIN rail types fit easily into switchboards and control panels, making them both safe and neat.

Ventilation fan

Fans can be automatically operated in preset cycles.

Ozone Generators

Sterilisation by ozone and ultraviolet rays can be automatically conducted several times per day.

Moulding Material Dryers

Drying operations can be performed at any desired time, day or night.

Ozone Generators

Sterilisation by ozone and ultraviolet rays can be automatically conducted several times per day.

Moulding Material Dryers

Drying operations can be performed at any desired time, day or night.

Preliminary operations for moulding machines and solder baths can be controlled, eliminating the need for early morning shifts and cutting operating losses.

Ventilation fan

Outdoor Lighting

Ideal for road and landscape lighting. Used with magnetic contactors, numerous lighting systems can be controlled with a signal Time Switch.

ATM Services

Power, lighting and air conditioning can be automatically operated to match the hours of ATM services, preventing the possibility of forgetting to turn them on or off.

Preliminary operations for moulding machines and solder baths can be controlled, eliminating the need for early morning shifts and cutting operating losses.

Ventilation fan

Preliminary operations for moulding machines and solder baths can be controlled, eliminating the need for early morning shifts and cutting operating losses.

ATM Services

Power, lighting and air conditioning can be automatically operated to match the hours of ATM services, preventing the possibility of forgetting to turn them on or off.

Preliminary operations for moulding machines and solder baths can be controlled, eliminating the need for early morning shifts and cutting operating losses.

Ventilation fan

Preliminary operations for moulding machines and solder baths can be controlled, eliminating the need for early morning shifts and cutting operating losses.

ATM Services

Power, lighting and air conditioning can be automatically operated to match the hours of ATM services, preventing the possibility of forgetting to turn them on or off.

Preliminary operations for moulding machines and solder baths can be controlled, eliminating the need for early morning shifts and cutting operating losses.
Example 3 | Offices, Residences and Commercial Facilities

Time Switches can be used to save electricity during the times when lighting and air conditioning are not needed, like at lunchtime and late at night.

Air Conditioning

Air conditioning can be set to match business hours, to provide comfortable work spaces. This also prevents the possibility of forgetting to turn it off.

Office Lighting

Lighting can also be turned on and off to match business hours. This prevents the possibility of forgetting to turn it off during lunchtime and at night, and lowers the electric bill.

Sign Lighting

Signs and neon lighting can be turned on at precisely the time that the store opens.

Automatic Doors and Electric Locks

Entrance locks can be managed without the need for a custodian.

Shared Spaces in Condominiums

Shared lighting for the entrance hall and stairways can be automatically turned on and off. This also prevents the possibility of forgetting to turn them on or off.

Freezers (Defrosting Heaters)

The defrosting heaters inside freezers for perishable meats and vegetables, or for frozen foods such as ice cream, can be automatically turned on and off for precise control.

Example 4 | Agriculture and Livestock

Time Switches can be used to automatically supply food and water at appropriate times each day, to increase working efficiency.

Feeders

Predetermined amounts of food can be automatically supplied at predetermined times each day, to reduce manual labour.

Oxygen Supply

By alternately operating two pumps, a stable amount of oxygen can be supplied to fish farms.

Lighting Flower Plantations

By controlling the duration of lighting, plant growth can be managed more efficiently.

Sprinklers

Predetermined amounts of water can be sprinkled at predetermined times each day.

Greenhouse Heating

Boilers or heaters can be automatically operated during cold seasons to keep greenhouse interiors warm for stable plant growth.

Electrified Exterminators

Exterminators can be operated during the times that harmful insects proliferate.
## Types of Time Switches

### Surface mounting
- For various uses
- TB35N, 36N, 38N, 39N series
- TB35N, 38N series
- TB21, 11N series

### DIN rail mounting
- For distribution panels, etc.
- TB35N, 36N, 38N, 39N series
- TB37 series
- TB45 series

### DIN 72 panel mounting
- For control panels, etc.
- TB35N, 36N, 38N, 39N series
- TB21 series
- TB27 series

### Example of application
- Light culture, watering, ventilation
- Shop’s sign board
- Production equipment

---

### Line-up

| Item No. | TB35809NE5 | TB35809NE6 | TB36809NE5 | TB38809NE7 | TB39809NE7 | TB358NE5 | TB358NE6 | TB388NE7 | TB398NE7 | TB37801 | TB37901 | TB45018 | TB2118E7 | TB2128E7 | TB5590185N | TB5560187N | TB5640185N | TB5630187N | TB621018(A)7* | TB622018(A)7* |
|----------|------------|------------|------------|------------|------------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| Series   | TB27       | TB37       | TB45       |            |            | TB21    | TB27    | TB37    | TB45    | TB21    |         |         |         |         |         |         |         |         |         |         |         |
| New      | NEW        | NEW        | NEW        |            |            |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |

---

*For TB2118E7, TB2128E7 don’t have an automatic summer time function for the Asian market. The TB2118E7, TB2128E7 have an automatic summer time function for the European market.
**Surface & DIN rail mount type**

**TB35N, 36N, 38N, 39N series**

- 24-hour program
- Surface and DIN rail mount
- 300-hour reserve battery (TB38N, 39N)
- Battery exchange from the front side.
- 96 operations per day
- Shortest switching time is 15 minutes.
- Easy to read and set, clock display.

**TB43N series (Weatherproof)**

- Weatherproof type (IP53)
- 24-hour program
- Surface mount
- 300-hour reserve battery
- Battery exchange from the front side.
- 96 operations per day
- Shortest switching time is 15 minutes.
- Easy to read and set, clock display.

**Surface mount type**

**TB35N, 36N, 38N, 39N series**

- 24-hour program
- Surface and DIN rail mount
- 300-hour reserve battery (TB38N, 39N)
- Battery exchange from the front side.
- 96 operations per day
- Shortest switching time is 15 minutes.
- Easy to read and set, clock display.

**TB17N, TB11N series**

- Robust steel box
- 24-hour program
- Surface mount
- 300-hour reserve battery (TB38N)
- Battery exchange from the front side.
- 96 operations per day
- Shortest switching time is 15 minutes.
- Easy to read and set, clock display.

**TB11N, TB11N series**

- 24-hour program
- ON/OFF operations are set with separated pins
- With a manual ON/OFF switch
- 300 hours reserve battery (TB11N)
- Battery exchange from the front side.
**TB21 series**

- Easy setting with a mode change switch
- High capacity
  - Resistive load: 30A
  - Inductive load (cosØ=0.6): 12A
- 24-hour program (TB2118) / Weekly program (TB2128)
- Surface and DIN rail mount
- 5-year reserve battery

**Dimensions (unit: mm)**

**TB559, 556, 564, 563 series**

- 24-hour program (TB559, TB556)
- Weekly program (TB564, TB563)
- 300-hour reserve battery (TB556, TB563)
- With robust metal setting pins
- DIN 3P module

**Dimensions (unit: mm)**

**TB62 series (Digital)**

- Weekly type
- 6-year reserve battery
- With a manual ON/OFF button
- Possible to lock the manual button
- Holiday setting function
- Manual ±1 hour changeover function
- DIN 2P module

**Dimensions (unit: mm)**
TB37, TB45 series

- 24-hour program
- 180-hour reserve battery (TB45)
- Battery exchange from the back side.
- 96 operations per day
- Shortest switching time is 15 minutes.
- With ON/AUTO/OFF manual switch
- 96 operations per day
- Battery exchange from the back side.
- 180-hour reserve battery (TB45)
- 5-year reserve battery
- DIN 72 panel mounting
- 24-hour program (TB271018) / Weekly program (TB272018)
- Easy setting with a mode change switch

TB27 series

- Easy setting with a mode change switch
- 24-hour program (TB271018) / Weekly program (TB272018)
- DIN 72 panel mounting
- 5-year reserve battery

Wiring Examples

Single Pole, Single Through (1a Contact)

<table>
<thead>
<tr>
<th>When direct controlled by a time switch</th>
<th>When a magnetic switch and contactor are used together</th>
</tr>
</thead>
<tbody>
<tr>
<td>No voltage contact output</td>
<td></td>
</tr>
<tr>
<td>When the time switch and load power supply are separate</td>
<td>Note: Before operating, take all protective wires of electromagnetic switch shown with dotted lines in diagram</td>
</tr>
</tbody>
</table>

Single Pole, Double Through (1c Contact)

<table>
<thead>
<tr>
<th>When direct controlled by a time switch</th>
<th>When a magnetic switch and contactor are used together</th>
</tr>
</thead>
<tbody>
<tr>
<td>No voltage contact output</td>
<td></td>
</tr>
<tr>
<td>When the time switch and load power supply are separate</td>
<td>Note: Before operating, take all protective wires of electromagnetic switch shown with dotted lines in diagram</td>
</tr>
</tbody>
</table>

Dimensions (unit: mm)

Load capacity

<table>
<thead>
<tr>
<th>Item No.</th>
<th>Series</th>
<th>Number of ON/OFF operations</th>
<th>Operating voltage / frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>TB272018E7</td>
<td>Weekly type</td>
<td>4 operations(ON/OFF 2sets)</td>
<td>220V AC 1500W</td>
</tr>
<tr>
<td>TB271018E7</td>
<td>Daily type</td>
<td>96 operations</td>
<td>220V AC 250V</td>
</tr>
</tbody>
</table>

Note: Before operating, take off all protective wires of electromagnetic switch shown with dotted lines in diagram.